

# Theme 4: Technology Transfer and Outreach

Mike Kraus



Science Transition Process



# Elements for Achieving a Successful Transition

- Advocates are paramount
  - User advocate understands product and relevance
  - Program advocate well-positioned to catalyze priority and funding actions
- Adequate funds are required
  - Resources for development are often different than resources for transition
  - Transitions are not budget neutral and adequately funding is a must
  - Resources need to be identified and committed early in transition process





# Elements for Achieving a Successful Transition (Cont)

- Transitions are planned early
  - Transition timeline is long; thus transition should be considered when a research concept shows promise to improve a mission
- Research and operational cultures and goals are recognized and appreciated
  - R&D and O&M organizations have differing perspectives and cultures
- Transition planning should allow for a continuing infusion of new technology





# Background

- GSD-produced technologies positively impacting operations
  - Technologies have included new processes for transition (DTC, HMT, RTO), improved operational capabilities (FX-Net, FX-C), and complete systems (AWIPS, Profiler, RUC, MADIS, GPS-IPW)
- Experiences include successes and challenges
  - Potential transitions help build synergy between technology developers and potential users
  - Some transition efforts have encountered budgetary and cultural obstacles
  - Projects that have been largely successful and those that challenge us will be presented





# Success: Rapid Update Cycle

- Stable funding provided by main stakeholders and leveraged through other projects
- Synergistic interaction between FSL/GSD staff and larger research community facilitating critical developments of new modeling and data assimilation capabilities
- Strong and frequent interactions between GSD and the operational community resulting in advocacy and cultural acceptance
- Vision from OAR to provide adequate computing facilities for RUC R&D



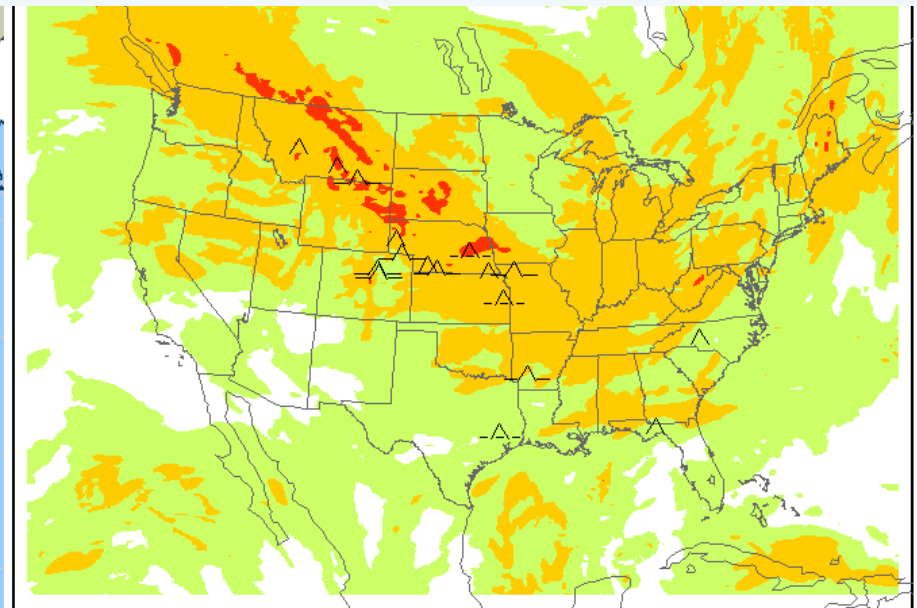
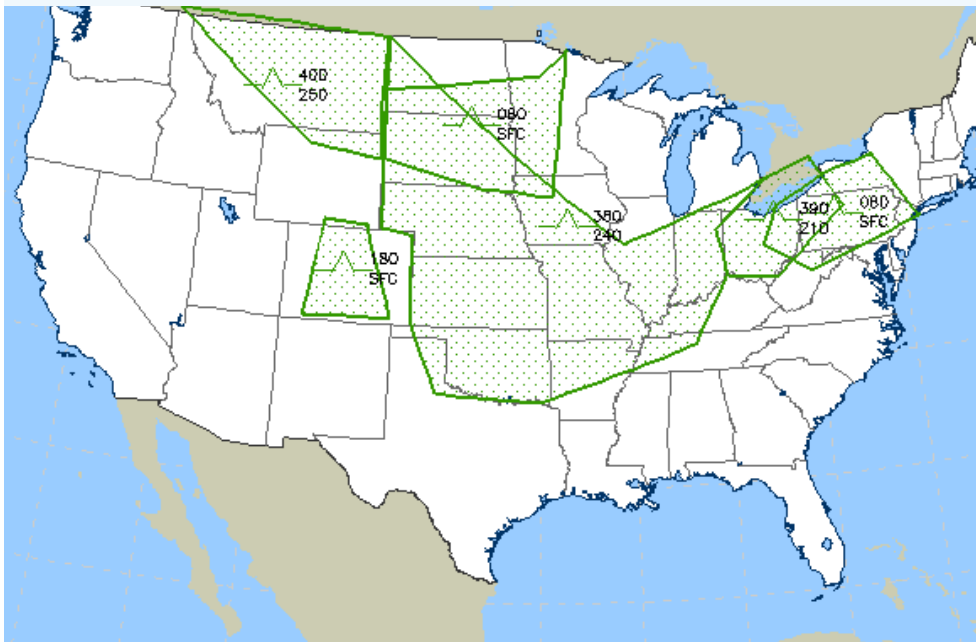


# RUC: Technology Transition Impacts

## Improved Predictability of Weather

Human Generated Turbulence  
Weather Products

Automated Turbulence Forecasts  
based on the Rapid Update Cycle model





# Challenge: Pseudo-operational Capabilities (e.g., FX-C, FX-Net, MADIS, GPS-IPW)

- Pseudo-operational capability began before a transition strategy could be negotiated and funding sources found
- The transition process is also impeded by cultural differences between the field, where the capability is utilized, and headquarters, where programmatic priorities are decided
- Transition planning is underway for these capabilities





# Facilitating Transitions: Testbeds and Processes

- Developmental Testbed Center is the primary gateway for transitioning promising and well-tested NWP science and technology to NWS operations
- Hydrometeorological Testbed is a test facility for sensors and workstations associated with extreme precipitation events. WFOs, RFCs, and state governments participate in evaluating candidate capabilities for technology transition.







# Facilitating Transitions: Testbeds and Processes (Cont'd)

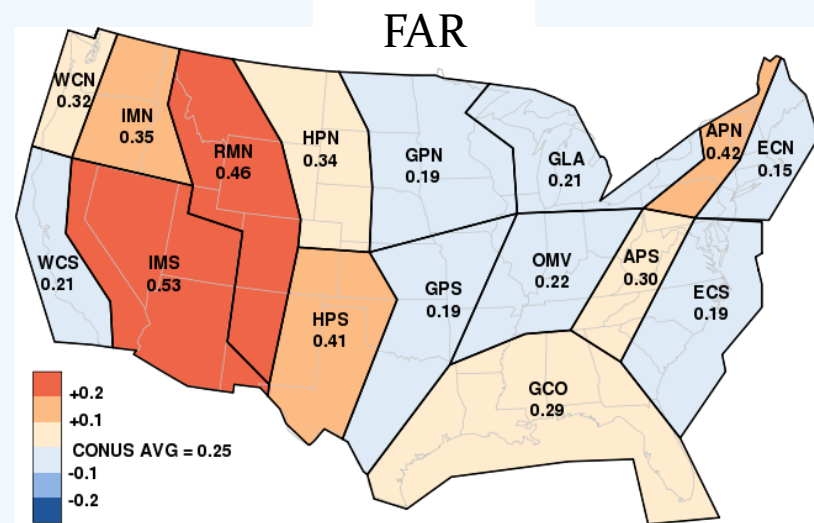
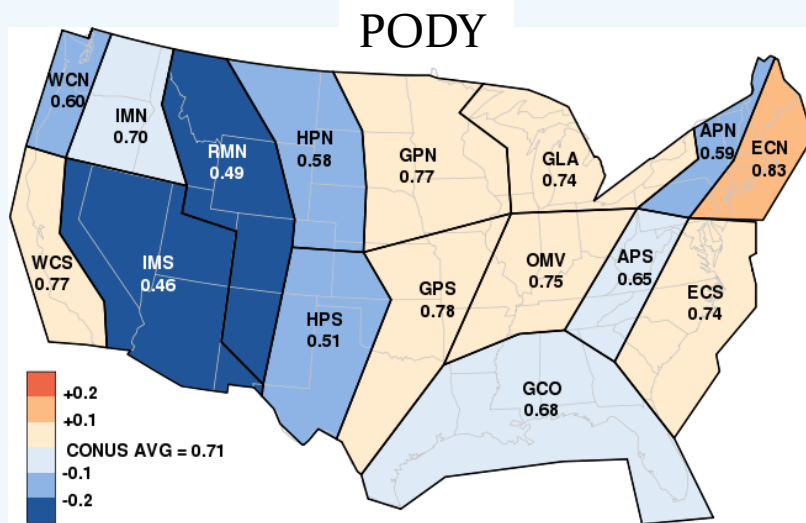
- FAA's Research to Operations Process is a transition process that takes aviation-related technologies from inception to operations
- Agreements, and the NWS Operational Service Improvement Process (OSIP) are formal processes which provide early planning, enable frequent communication, and advocacy for product transition
- GSD evaluates DTC and RTO product quality





# Facilitating Research to Operations Transitions Through Evaluations

Regional performance for the national  
ceiling and visibility analysis product.  
GSD Quality Assessment Report (Loughe et al. 2009)





# Technology Transfer Awards and Operational Support

- 2009 – Graphical Forecast Editor
  - 2008 - LAPS software used in Precision Air Drop System
  - 2005 – Air Force Range Standardization and Automation (RSA)
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- 2007 – NWS Award of Excellence – FX-Net IMET Fire Weather Support
  - 2006 – NOAA Bronze Medal – Operational support using the Volcanic Ash Coordination tool
  - 2006 - OAR Employee of the Year Award - Operational support of the Real-Time Verification System (RTVS)

